

36. Stalk-eyed Crustaceans collected at the Monte Bello Islands. By MARY J. RATHBUN, United States National Museum, Washington, D.C., U.S.A.*

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This little collection, numbering only 28 species, contains three new species and variations of several old ones. Incidentally a new name is given to one of the numerous forms of *Thalamita* related to *T. admete*, which in time can perhaps be lined up as subspecies or varieties of that species. The most notable of the new species is the *Glyptoxanthus*, a genus new to the Indo-Pacific region.

A remarkable discovery is the fact that at least one of the marine crabs, *Naxiooides serpulifera*, undergoes transformation to the adult form while it is still within the brood-pouch of the mother. Furthermore, it there passes through two adult stages, but whether the first is hatched directly from the egg or not, it is impossible to tell. It has long been known that the fresh-water crabs (Potamonidæ) develop into the adult form before leaving the mother, and in some cases at least pass through a megalops stage. Careful researches into the metamorphoses of marine crabs would doubtless disclose other cases similar to that here recorded.

Order DECAPODA.

Family PENEIDÆ.

METAPENEUS MONOCEROS (Fabricius) ‡.

Metapeneus monoceros Alcock, Catal. Ind. Dec. Crust. Ind. Mus., Part iii. Fasc. i. 1906, p. 18, pl. iii. figs. 7-7c.

Dredged off Hermite; 2 fathoms; July 7, 1912; No. 110: 1 ♂ juv., about 47 mm. long.

METAPENEUS STRIDULANS Alcock?

Metapeneus stridulans Alcock, Catal. Ind. Dec. Crust. Ind. Mus., Part iii. Fasc. i. 1906, p. 27, pl. v. figs. 14, 14 a-d, and synonymy.

* Communicated by Prof. J. STANLEY GARDINER, M.A., F.R.S., F.Z.S.

† For explanation of the Plates see p. 664.

‡ [The parentheses around the names of authors placed after scientific names in this paper are used in accordance with Article 23 of the International Rules of Nomenclature (Proc. 7th Int. Cong. Boston, 1907, p. 44 (1912)).—EDITOR.]

Monte Bello Islands; special locality not given: 1 ♀.

In the main, this specimen agrees with Alcock's description and figures. There are 17 ridges in the stridulating organ near the posterior corners of the carapace. The telson and the thelycum differ from typical *stridulans*. The telson has 5 (not 4) pairs of marginal spines, 4 pairs of which are movable, and the posterior pair immovable. The thelycum has the plate between the legs of the fifth pair similar to that in fig. 14*d*, *loc. cit.*; the plate between the legs of the fourth pair is trilobate or in the shape of a clover-leaf; the bar between those two plates is longer (from front to back) and narrower than the same plate in Alcock's figure.

On p. 50 of his Catalogue (*op. cit.*), Dr. Alcock suggests the identity of my *akayebi* with *stridulans*. *M. akayebi*, however, is quite distinct: the body and rostrum are more slender, the teeth on the latter more prominent; the antennal, hepatic and branchiostegal spines are larger; the second and third segments of the antennular peduncle are longer and more slender; subterminal prominence on carina of fifth abdominal segment obtusangular, not dentiform; sixth segment longer and narrower than in *stridulans*. The thelycum is similar to that of the female from the Monte Bello Islands.

Family CRANGONIDÆ (=Alpheidæ).

CRANGON EDWARDSII (Audouin).

Alpheus edwardsii de Man, Jour. Linn. Soc. London, Zool., vol. xxii. 1888, p. 266, and synonymy.

Home Lagoon, Hermite; Aug. 12, 1912; No. 140: 1 ♀ ovig., 51 mm. long.

Monte Bello Islands; special locality not given; 2 specimens; the larger one lacks both pairs of chelipeds, the smaller one lacks the larger cheliped of the first pair.

The two specimens possessing chelipeds of the second pair belong to the variety in which the first and second joints of the carpus are of the same length. The larger of these specimens shows a faint notch in the upper margin of the smaller manus of the first pair.

CRANGON BUCEPHALUS (Coutière), var.

Alpheus bucephalus Coutière, Alpheidæ in Gardiner's Mald. & Laccad. Archip., 1905, p. 890, pl. lxxviii. figs. 29-29*f*; De Man, Alpheidæ 'Siboga,' 1911, p. 316.

Dredged off Hermite; sandy bottom; July 9-12, 1912; No. 109: 1 ♂, about 12.5 mm. long.

The differences between our specimen and the type are so few that the former probably represents no more than a variety of the latter. The specimen in hand is considerably larger than the

type; it has not so long a rostral tooth, and consequently the sinuses between that tooth and the orbital prominences are not so deep; the antennal peduncle is not so long as in Coutière's fig. 29, although it is a little longer than the antennular peduncle; the merus of the larger cheliped has a tooth at the lower distal angle, not unlike the tooth shown in Coutière's fig. 29 *a'*, but he says (p. 821) "le méropodite est inerme," and in the figure, the tooth is applied against the carpus so that it is inconspicuous.

Family PALÆMONIDÆ.

Subfamily Pontoniinæ.

PERICLIMENES HERMITENSIS, sp. n. (Pl. I. figs. 1-3.)

Hermite; under rock; Aug. 17, 1912; No. 159, 1 ♀ ovig.

Dimensions. Type ♀, length from tip of rostrum to tip of telson, approx., 39 mm.; length of carapace, 14 mm.

A *Periclimenes* with thorax strongly arched from front to back as well as from side to side. Rostrum reaching to middle of third segment of antennular peduncle, compressed, thin; upper margin convex, armed with six teeth, the posterior of which is slightly behind the orbit; tip acute; lower limb shallower than upper, margin slightly convex, unidentate. An antennal and a hepatic spine present; no supraorbital spine. Branchiostegal angle of carapace rounded. Eyes small. Scale of antennulæ narrow-ovate, reaching nearly to end of second segment, basal spine curved, acuminate. Peduncle of antennæ reaches just to end of first segment of antennulæ, basal spine small; scale ovate-oblong, most produced at inner angle, its outer spine small, scale reaching beyond the peduncle of the antennulæ but not so far as their flagella; the flagellum of the antennæ when bent back reaches half the length of the abdomen.

The added lengths of the last two articles of the third maxilliped exceed that of the antepenultimate article. The chelipeds of the first pair when extended reach beyond the acicle by the length of their chelæ; merus and carpus subequal, manus $1\frac{1}{2}$ times as long as fingers and $\frac{2}{3}$ as long as carpus. Chelipeds of second pair subequal, reaching beyond the acicle by the length of the chelæ; merus cylindrical, unarmed; carpus cup-form, a large V-shaped notch in the lower, outer portion of the distal margin; manus subcylindrical, gradually widening a little distally; fingers nearly as long as palm, prehensile edges entire and meeting or overlapping when closed except at the base, where there is a very low tooth on the fixed finger between two similar ones on the dactylus; tips spiniform, turned sharply toward each other.

The dactyli of the third, fourth and fifth feet are short (about $\frac{1}{6}$ as long as the propodi), curved; lower margin convex at the base, but without spines or other protuberance.

The first three segments of the abdomen are very broad; sixth segment not much longer than wide and $\frac{2}{3}$ as long as the telson;

the latter is triangulate, with nearly straight sides, and an obtuse angled tip armed with three pairs of spinules, of which the intermediate pair is longest and the outer pair shortest. Uropods broad-oval, longer than the telson, the outer pair broader and a very little longer than the inner pair.

Colour. The specimen, which is preserved in formalin and glycerine, is handsomely marked with lines of crimson and purple; on the pleura of the first three abdominal segments there are four incomplete oval areas partly outlined with narrow crimson stripes; the same colour forms a ring on the end of each uropod, the inner ring smaller than the outer; the tip of the telson is also outlined in the same colour; within these five areas of the tail-fan, the colour is a lighter yellowish-red. Dorsal face of carapace a brownish-orange. Chelipeds of second pair with a narrow stripe of purple at the distal end of the merus, carpus and manus, and a more crimson stripe on the distal half of the fingers. The third, fourth, and fifth feet have similar purple stripes on the three principal segments.

This species is not very nearly related to any other. It has the same rostral formula, $\frac{6}{1}$, as *P. parvus* Borradaile (see Willey, Zool. Results, Part iv. 1900, p. 407, pl. xxxvi. figs. 3-3c), but that species is more slender, with lower rostrum and larger eyes.

ANCHISTUS INERMIS (Miers).

See Borradaile, Ann. Mag. Nat. Hist. (7) vol. ii. 1898, p. 387.

Hermite, in mantle-cavity of *Pinna*; July 7, 1912; No. 112: 1 ♀ ovig., about 26 mm. long.

This corresponds in the main with the description and figures given by Miers (Crust. 'Alert,' 1884, p. 291, pl. xxxii. figs. *B*, *b*). In the Hermite specimen, the telson has at the end four setæ, the outer pair stouter than the slender inner pair but nearly as long; Miers's fig. *b* shows five setæ, one median and two lateral pairs, the outer pair about half as long as the inner. The smaller cheliped of the second pair in our specimen has the tooth on the dactylus feebly developed, and fitting into a cavity in the fixed finger; in Miers's type this tooth was not developed, but the specimen was smaller.

Miers described the species from Port Molle, Queensland; he also had a specimen taken from a *Pinna* at Sharks Bay, West Australia.

Family PAGURIDÆ.

DARDANUS MEGISTOS (Herbst).

Pagurus punctulatus Alcock, Catal. Ind. Dec. Crust. Ind. Mus., Part ii. Fasc. i. 1905, p. 81, pl. viii. fig. 1.

One specimen, of medium size. The species is distributed throughout the Indo-Pacific region.

Family PORTUNIDÆ.

THALAMITA DISPAR, nom. n. (Pl. I. fig. 4.)

Thalamita savignyi de Man (not A. Milne-Edwards), Zool. Jahrb., Syst., vol. viii. 1895, p. 564.

Monte Bello Islands; 3 ♂.

Dimensions. Type and largest ♂: length of carapace 15.2 mm.; width 25.4 mm.

This is the same species as that described by de Man (*loc. cit.*), for I have at hand for comparison one of his specimens from Palos Bay, West Celebes; but it cannot be the true *savignyi* of A. Milne-Edwards (Arch. Mus. Hist. Nat. Paris, vol. x. 1861, p. 357), because in the figure of this in Savigny's 'Égypte' (Crust. pl. iv. fig. 4) the inside of the hand shows coarse granules.

Carapace pubescent except on the elevated ridges. These are prominent; the posterior one across the cardiac region with a small piece on the branchial region, though bare and elevated, lacks the distinct granulated edge which characterizes the other ridges. Lobes of front separated by an open median slit. Fourth tooth of lateral margins absent. Five crests on upper and outer surface of palm, the two uppermost crests each with three spines, of which the terminal one is short and subacute; third crest tuberculate, fourth and fifth obscurely granulate, the fifth very finely so; the first three interspaces each with some coarse granules and also pubescent; in the smallest of the three specimens, the third interspace is smooth; there may be a line of pubescence above the lowest crest but it is not constant.

The above characters suffice to differentiate this from other members of the *admete* group.

The Celebes specimen is an adult female smaller than any of the males. It differs from them in having a very shallow and small median emargination in the front. There is a minute rudiment of a fourth lateral tooth on the right side only.

Family XANTHIDÆ.

CARPILODES RUBER A. Milne-Edwards.

Carpilodes ruber A. Milne-Edwards, Nouv. Arch. Mus. Hist. Nat. Paris, vol. i. 1866, p. 228, pl. xi. figs. 4-4b.

Without special locality; 2 ♀ immature, 13 mm. and 14.4 mm. They retain a deep crimson colour in alcohol.

Home Lagoon, Hermite; under stones; July and August, 1912; No. 108: 3 ♀ (1 mature, 2 young).

ATERGATIS OCYROË (Herbst).

Atergatis floridus Alcock, Jour. Asiat. Soc. Bengal, vol. lxxvii. 1898, p. 98.

Without special locality: 1 ♂, 1 ♀ juv.

PLATYPODIA GRANULOSA (Rüppell).

Lophactea granulosa Alcock, Jour. Asiat. Soc. Bengal, vol. lxvii. 1898, p. 101.

Without special locality: 3 ♂, 2 ♀, 2 juv.

ACTÆA AFFINIS (Dana).

Acteodes affinis Dana, Crust. U. S. Expl. Exped., vol. i. 1852, p. 197; Atlas, 1855, pl. xi. fig. 3.

Home Lagoon, Hermite; under stones; July 1912; No. 105: 1 ♂.

ACTÆA GLANDIFERA, sp. n. (Pl. I. fig. 5.)

Type-locality. Monte Bello Islands: special locality not given; 2 ♂, 1 ♀ (1 ♂ is type).

Additional locality. Home Lagoon, Hermite, under stones; July 1912; No. 107: 1 ♂, 1 ♀.

Dimensions. Type ♂, length 8.4 mm., width 12 mm.

Closely related to *Actæa spinosissima* Borradaile*, from which it differs in the character of its tubercles and spines rather than in their position. The tubercles of the dorsal surface are broad and arcuate as in *spinosissima*, but are thicker and less flattened and less petaloid, those toward the lateral margins being acorn-shaped. This is also the form of the five antero-lateral spines behind the orbit; in *spinosissima* they are long spines. The projections of the front are simply crenulations, not spines nor spiniform teeth. Spines of chelipeds short, stout, acorn-shaped, and directed a little forward as are those on the carapace. The spines on the legs are longer than on the chelipeds and are stout and subacute, not slender and elongate as in *spinosissima*.

Although the five specimens are all larger than any specimen of *spinosissima* yet recorded, there is no indication of intergrading from one species to the other.

GLYPTOXANTHUS CYMBIFER, sp. n. (Pls. I., II. figs. 6, 7.)

Type-locality. Monte Bello Islands; no special locality given: 2 ♂ (1 is type), 1 ♀.

Dimensions. Type ♂, length of carapace 10.6 mm., width of same 17 mm. Paratype ♀, length of carapace 12.7 mm., width of same 20 mm.

The carapace is closely covered with small bead granules, and is deeply areolated; the protogastric regions are divided into two oblong lobules by a longitudinal furrow; the branchial region bears about six lobules of irregular size, the two next the inner angle of the region being connected by a posterior elevation. There are four small tuberculiform teeth on the lateral margins

* In Gardiner, Fauna Mald. & Laccad. Arch. i. Part 3, 1902, p. 256, text-fig. 55.

behind the angle of the orbit; they are widely separated by a granular rim; all these teeth except the posterior one are above the true margin, which inclines downward toward the angle of the buccal cavity, as in all the members of this genus. The frontal lobes are obliquely truncate, and separated by a broad, shallow V.

The upper-outer surface of the carpus and the upper surface of the manus are occupied by deep, more or less rounded cavities, with rims which are microscopically granulated but appear smooth in relation to the general granulation of the body. The blackish-brown colour of the fingers runs far back on the lower part of the palm in the male, but is confined to the digits in the female; their granules are set in a felt-like background.

The ambulatory legs are remarkable in having the upper surface of the carpal and propodal segments each occupied by a deep cavity bordered on the posterior margin by a thin rim, somewhat resembling a longitudinal section of a serpulid tube, and on the anterior margin by a thick band of pointed granules irregularly placed.

Lower surface of crab hairy, the hairs of two kinds, one fine, the other coarse, but both soft.

Glyptoxanthus has hitherto been known only from the coasts of middle America, West Africa, and the Cape Verde Islands.

G. erosus (Stimpson) from the West Indian region attains a width of about 4 cm. When small, about the size of these specimens of *G. cymbifer*, it has a granulated surface; with age the granules wear down smooth, giving it a much more eroded appearance.

Our species differs from all the other described species in the curious hollows or cups on the chelipeds and legs.

XANTHIAS ATROMANUS (Haswell).

Xanthodes atromanus Haswell, Catal. Austral. Crust. 1882, p. 49, pl. i. fig. 1.

Home Lagoon, Hermite; June 1912; No. 106: 3 ♀ ovig., varying from 8.7 mm. to 13.6 mm. in width.

PHYMODIUS UNGULATUS (Milne-Edwards).

For variations, see *Phymodius unguatus* Rathbun, Mem. Mus. Comp. Zool. vol. xxxv. 1907, p. 46, pls. iii. & iv.

Monte Bello Islands: 1 ♀ immature.

Length of carapace 8 mm., width 11 mm.; width of front, orbital angle excluded, 4 mm.

In this specimen the areoles of the carapace are very much subdivided, the lateral marginal lobules obtuse except the last which has a very short spinule at the tip, the chelipeds are subequal, the palms have subparallel margins and acute tubercles, the fingers are slightly curved and have a narrow gape.

PILUMNUS VESPERTILIO (Fabricius).

Pilumnus vesperilio Alcock, Jour. Asiat. Soc. Bengal, vol. lxvii. 1898, p. 192, and synonymy.

Under stones, Home Lagoon, Hermite; July 1912; No. 106 :
1 ♀.

PILUMNUS CÆRULESCENS A. Milne-Edwards, var.

? *Pilumnus cærulescens* Alcock, Jour. Asiat. Soc. Bengal, vol. lxvii. 1898, p. 196; Rathbun, Kgl. Danske Vidensk. Selsk. Skrifter, 7 Række, naturv. og mathem., vol. v. p. 355, pl. i. fig. 15.

Under stones, Home Lagoon, Hermite; July 1912; No. 106 :
1 ♂.

Dimensions. Length of carapace 12.6 mm., width 16.8 mm.

This is the same form as that which I recorded from the Gulf of Siam (*loc. cit.*). The specimen is considerably larger than any examined at that time, and some of the features are more sharply marked. Although all of the regions are ornamented with granules, they are not closely placed. The outer dentiform lobe of the front is separated from the rest of the front by a U-shaped gap. The two emarginations in the upper border of the orbit are well marked. The antero-lateral projections and also the subhepatic one are well developed spines; the orbital and subhepatic spines are shorter than the other three; these last have a stout base and form at the middle a shoulder from which a cluster of hairs proceeds. A striking feature of the cheliped is the presence on the upper margin of the merus of two strong white spines, one terminal, the other subterminal and larger. The carpus is armed with short, stout spines, the manus with granules; neither spines nor granules are closely placed, and the granules are absent from the lower distal corner of the larger palm. The ornamentation of the whole upper surface is obscured by the coarse hairs of uneven length.

The colour in formalin and glycerine is brownish; the carapace has a ground of yellowish-brown, overlaid with patches of reddish-brown; upper surface of legs with two patches of brownish-red on the merus, the carpus, and the propodus.

ACTUMNUS SETIFER (de Haan).

Actumnus setifer Alcock, Jour. Asiat. Soc. Bengal, vol. lxvii. 1898, p. 202.

Monte Bello Islands: 1 ♂.

The areolæ of the undenuded carapace are high and very deeply separated and the lateral teeth very prominent; otherwise this individual does not differ from typical specimens from Japan.

Family OCYPODIDÆ.

Subfamily Ocypodinæ.

UCA FORCIPATA (Adams & White). (Pl. II. fig. 8.)

Gelasimus forcipatus Adams & White, Zool. Samarang,⁷ Crust. 1848, p. 50.

3 ♂, large, medium, and small.

The cheliped of the largest specimen has the large distal tooth of the dactylus at more than $\frac{1}{3}$ the distance from the tip; in the medium specimen, the tooth is at just the distal third. In the smallest specimen this tooth is absent, the specimen representing "form 2" of the species.

Subfamily Mictyrinæ.

MICTYRIS LONGICARPUS Latreille.

Mictyris longicarpus Alcock, Jour. Asiat. Soc. Bengal, vol. lxi. 1900, p. 384, and synonymy.

Monte Bello Islands: 10 ♂, 2 ♀.

Family INACHIDÆ.

Subfamily Acanthonychinæ.

HUENIA PROTEUS (de Haan).

Huenia proteus Alcock, Jour. Asiat. Soc. Bengal, vol. lxi. 1895, p. 195, and synonymy.

Dredged off Hermite; July 12, 1912; No. 115; 1 ♀ immature.

Subfamily Pisinæ.

HYASTENUS ORYX A. Milne-Edwards.

Hyastenus oryx Alcock, Jour. Asiat. Soc. Bengal, vol. lxi. 1895, p. 214, and synonymy.

Under stones in 'lagoons'; June to Aug., 1912; No. 114; 1 ♀ juv.

NAXIOIDES SERPULIFERA (Guérin). (Pl. II. figs. 9, 10.)

Pisa serpulifera Guérin, Icon. Règne Anim., Crust. pl. viii. figs. 2, 2 a, 2 b, 2 d.*Naxia serpulifera* Milne-Edwards, Hist. Nat. Crust., vol. i. 1834, p. 313.

Monte Bello Islands: 1 ♀ mature.

Under stones in 'lagoons,' June to Aug., 1912; No. 114: 1 ♀ juv.

Dimensions. Length of carapace of large female to end of horns, 92 mm.; width, exclusive of spines, 59 mm.

An elongated sponge covers the upper surface of the right

rostral horn, and two other sponges are growing on the gastric region.

The abdominal cavity is filled with young crabs in the adult state. The cavity is about 40 mm. wide, 39 mm. long, and about 20 mm. high at the greatest extent; the abdominal appendages are very slender, so that the bulk of the space is occupied by the young, which number 162. These represent two stages, those of the first or earlier stage being 13 in number with carapace about 3.5 mm. long; while those of the next or older stage are 149 in number and about 5.7 mm. long.

The younger ones although thin-shelled are harder and more opaque than the next stage, and correspond to what is known along the Atlantic coast of the United States as "paper-shell" crabs; they are covered with minute red pigment spots; the carapace is almost smooth and naked, its shape is oblong, not subtriangular as in adults; the postocular tooth is well-formed, triangular and separated by a shallow sinus from the supraocular eave; this latter shows no trace of a spine; as to the tip of the rostrum, the inner of the two spines is well-developed and forms the true end of the horn; on its outer side there is a faint prominence, which is later to become the strong lateral spine of the adult; the eyes are large, protruding, the cornea of a light brownish-red colour.

By the next moult, which takes place within the brood-pouch of the mother, the crab increases by more than half its former size, and undergoes several notable changes. The carapace is of similar form, but the whole integument is soft and devoid of colour spots; it is no longer smooth and naked, but uneven and covered with crowded tubercles or granules, with the beginnings of the more prominent tubercles of the adult; the surface is more or less hairy, there being clusters of hooked hairs as in the adult, and above all, a row on each rostral horn which is continued back on the carapace proper; the postocular cup forms a tooth which is separated by a triangular sinus from the supraocular eave, which last is armed with a small spine; rostral horns elongate, each armed with two subequal spines. In the adult, the postocular cup is separated from the supraocular eave only by a closed fissure. This indicates that *N. serpulifera* is generically removed from the other *Navioides* and should be placed in the neighbourhood of *Lissa* Leach (Zool. Misc. vol. ii. 1815, p. 69).

Subfamily Schizophrysinæ.

SCHIZOPHRYS DAMA (Herbst).

Cancer dama Herbst, Naturg. Krabben u. Krebse, vol. iii. part 4, 1804, p. 5, pl. 59, fig. 5.

Schizophrys dama Miers, Challenger Rept. vol. xvii, part 49, 1886, p. 67. Alcock, Jour. Asiat. Soc. Bengal, vol. lxiv. 1895, p. 245 and synonymy, but not "*Schizophrys aspera*, p. pt."

Milne-Edwards, given in Kossmann's synonymy; Illus. Zool. 'Investigator,' Crust. Part vi. 1898, pl. xxxv. figs. 2, 2a.

Under stones in 'lagoons'; Monte Bello Islands; June to Aug., 1912; No. 114: 1 ♀ juv. 20.3 mm. long, including rostrum, 14 mm. wide.

This specimen already shows the second or posterior spine on the outer margin of the rostral horn; it is considerably smaller than the anterior spine. It is not shown in the 'Investigator' figure.

Distribution. Straits of Malacca (*Alcock*); West Australia, 3 to 5 fathoms (*Miers*).

Family PARTHENOPIDEÆ.

PARTHENOPE (RHINOLAMBRUS) PELAGICA (Rüppell).

Lambrus (*Rhinolambrus*) *pelagicus* Alcock, Jour. Asiat. Soc. Bengal, vol. lxiv. 1895, p. 267, and synonymy.

Home Lagoon, Hermite; June 13, 1912; No. 103 a: 1 ♂.
Special locality not given: 1 ♂.

Order STOMATOPODA.

PROTOSQUILLA TRISPINOSA (Dana). (Pl. II. figs. 11, 12.)

See Borradaile, in Willey's Zool. Results, Part iv. 1902, p. 400.

Dredged off Hermite, 3 fathoms; in hole in piece of rock; July 7, 1912; No. 111: 1 ♀.

Special locality not given: 1 ♀, variety.

Length of larger specimen (variety) 41 mm., of smaller specimen 25 mm.

The smaller specimen agrees with Borradaile's amended description and figure, except that the fourth abdominal segment is corrugated much as the fifth is, only more faintly; the sides of the first, second, and third segments are also lightly carinated with three or four smooth ridges.

The larger specimen, which I take to be the same species, has some curious differences. The fourth abdominal segment and the sides of the first, second, and third are nearly smooth, which brings the specimen nearer to Borradaile's, which was of the same size. The fifth segment is bordered posteriorly by fine spinules. On the sixth and seventh segments, the spinules are shorter and stouter than in the small specimen, telson considerably wider than long, its three knobs less circular than in Borradaile's figure and in our small specimen, the outer knobs pear-shaped, the inner one subtriangular; the marginal lobes are not curved inward and are separated by shorter slits than in the smaller specimen; there is a carina parallel to the lateral margin, armed like the margin with spinules.

Colour-markings.—The specimens are preserved in formalin and

glycerine. The larger one has small brownish spots regularly arranged in transverse rows: two pairs on the carapace, one pair anterior, one pair more widely separated, at the middle, and a row of four on the posterior half; a row of four on the sixth thoracic segment, and the first, third, and fourth abdominal segments; a row of two on the second, fifth, and seventh abdominal segments. Knobs on telson olive-green, mottled. Uropods with a broad band of reddish-brown across the middle. Swollen part of chela white. The spotting of the smaller specimen is not so distinct and there are in addition many finer, branched spots down the middle of the animal, much as in Borradaile's figure.

GONODACTYLUS CHIRAGRA (Fabricius) var. SMITHII Pocock.

See Borradaile, in Willey's Zool. Results, Part iv. 1902, p. 400.

Home Lagoon, Hermite, under rock; July 13, 1912; No. 117a:
1 ♀.

This is the variety (Borradaile, *loc. cit.*), in which the keels of the sixth abdominal segment and telson are considerably compressed; the keels of the sixth segment are produced without constriction into long spines; the upper edge of the middle keel of the telson is produced backward into a spine; and the flukes of the anchor are formed by two narrow ridges running forward from the hinder end of that keel. The dark spots on the first five abdominal segments are not visible as the whole body is very dark in the preserved specimen except the swollen part of the chela, that of the manus being a deep blue, and of the dactylus a pinkish-red.

EXPLANATION OF THE PLATES.

PLATE I.

- Fig. 1. *Periclimenes hermitensis*, type ♀, side view, × 2.
 2. *Periclimenes hermitensis*, type ♀, rostrum, side view, × 5½.
 3. *Periclimenes hermitensis*, type ♀, rostrum and antennae, dorsal view, × 4½.
 4. *Thalamita dispar*, type ♂, dorsal view, × 2.
 5. *Actaea glandifera*, type ♂, dorsal view, × 3.
 6. *Glyptoxanthus cymbifer*, ♀, dorsal view, × 2.

PLATE II.

- Fig. 7. *Glyptoxanthus cymbifer*, type ♂, ventral view, × 2.
 8. *Uca forcipata*, showing outer surface of chela of largest ♂, × 1½.
 9. *Naxioides serpulifera*, young, first stage, × 12.
 10. *Naxioides serpulifera*, young, second stage, × 12.
 11. *Protosquilla trispinosa*, ♀, dorsal view, × 2.
 12. *Protosquilla trispinosa*, variety, ♀, dorsal view, × 2.